

SEVENTH APPROXIMATION
DATA FORM FOR CONVENTIONAL ASSESSMENT UNITS (Version 6, 9 April 2003)

IDENTIFICATION INFORMATION

Assessment Geologist:	S.B. Roberts	Date:	9/21/2005
Region:	North America	Number:	5
Province:	Wind River Basin	Number:	5035
Total Petroleum System:	Waltman Shale	Number:	503503
Assessment Unit:	Upper Fort Union Sandstones Conventional Oil and Gas	Number:	50350301
Based on Data as of:	IHS Energy (2005), Wyoming Oil and Gas Conservation Commission (2005)		
Notes from Assessor:	Uinta Green River Conventional Oil and Gas Assessment Unit (50200501) as partial analog.		

CHARACTERISTICS OF ASSESSMENT UNIT

Oil (<20,000 cfg/bo overall) or Gas (≥20,000 cfg/bo overall): Oil

What is the minimum accumulation size? 0.5 mmboe grown
(the smallest accumulation that has potential to be added to reserves)

No. of discovered accumulations exceeding minimum size: Oil: 1 Gas:
Established (>13 accums.) Frontier (1-13 accums.) X Hypothetical (no accums.)

Median size (grown) of discovered oil accumulations (mmbo):

1st 3rd 2nd 3rd 3rd 3rd

Median size (grown) of discovered gas accumulations (bcfg):

1st 3rd 2nd 3rd 3rd 3rd

Assessment-Unit Probabilities:

<u>Attribute</u>	<u>Probability of occurrence (0-1.0)</u>
1. CHARGE: Adequate petroleum charge for an undiscovered accum. ≥ minimum size:	<u>1.0</u>
2. ROCKS: Adequate reservoirs, traps, and seals for an undiscovered accum. ≥ minimum size:	<u>1.0</u>
3. TIMING OF GEOLOGIC EVENTS: Favorable timing for an undiscovered accum. ≥ minimum size:	<u>1.0</u>

Assessment-Unit GEOLOGIC Probability (Product of 1, 2, and 3): 1.0

UNDISCOVERED ACCUMULATIONS

No. of Undiscovered Accumulations: How many undiscovered accums. exist that are ≥ min. size?:
(uncertainty of fixed but unknown values)

Oil Accumulations:	minimum (>0) <u>1</u>	mode <u>3</u>	maximum <u>15</u>
Gas Accumulations:	minimum (>0) <u> </u>	mode <u> </u>	maximum <u> </u>

Sizes of Undiscovered Accumulations: What are the sizes (**grown**) of the above accums?:
(variations in the sizes of undiscovered accumulations)

Oil in Oil Accumulations (mmbo):	minimum <u>0.5</u>	median <u>1.5</u>	maximum <u>15</u>
Gas in Gas Accumulations (bcfg):	minimum <u> </u>	median <u> </u>	maximum <u> </u>

AVERAGE RATIOS FOR UNDISCOVERED ACCUMS., TO ASSESS COPRODUCTS

(uncertainty of fixed but unknown values)

<u>Oil Accumulations:</u>	minimum	mode	maximum
Gas/oil ratio (cfg/bo)	1000	2000	3000
NGL/gas ratio (bngl/mmcf)	30	60	90
<u>Gas Accumulations:</u>	minimum	mode	maximum
Liquids/gas ratio (bliq/mmcf)			
Oil/gas ratio (bo/mmcf)			

SELECTED ANCILLARY DATA FOR UNDISCOVERED ACCUMULATIONS

(variations in the properties of undiscovered accumulations)

<u>Oil Accumulations:</u>	minimum	mode	maximum		
API gravity (degrees)	30	45	55		
Sulfur content of oil (%)	0.05	0.15	0.5		
Depth (m) of water (if applicable)					
	minimum	F75	mode	F25	maximum
Drilling Depth (m)	600	1500	2000	2100	2800

<u>Gas Accumulations:</u>	minimum		mode		maximum
Inert gas content (%)	<div></div>		<div></div>		<div></div>
CO ₂ content (%)	<div></div>		<div></div>		<div></div>
Hydrogen-sulfide content (%)	<div></div>		<div></div>		<div></div>
Depth (m) of water (if applicable)	<div></div>		<div></div>		<div></div>
	minimum	F75	mode	F25	maximum
Drilling Depth (m)					

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ALLOCATIONS OF POTENTIAL ADDITIONS TO RESERVES TO STATES
Surface Allocations (uncertainty of a fixed value)

1. Wyoming	represents	100	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity		100	
<u>Gas in Gas Accumulations:</u>			
Volume % in entity			
2. _____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity			
<u>Gas in Gas Accumulations:</u>			
Volume % in entity			
3. _____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity			
<u>Gas in Gas Accumulations:</u>			
Volume % in entity			
4. _____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity			
<u>Gas in Gas Accumulations:</u>			
Volume % in entity			
5. _____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity			
<u>Gas in Gas Accumulations:</u>			
Volume % in entity			
6. _____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity			
<u>Gas in Gas Accumulations:</u>			
Volume % in entity			

7.	_____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum		mode	maximum
Volume % in entity	_____		_____	_____
<u>Gas in Gas Accumulations:</u>				
Volume % in entity	_____		_____	_____
8.	_____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum		mode	maximum
Volume % in entity	_____		_____	_____
<u>Gas in Gas Accumulations:</u>				
Volume % in entity	_____		_____	_____
9.	_____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum		mode	maximum
Volume % in entity	_____		_____	_____
<u>Gas in Gas Accumulations:</u>				
Volume % in entity	_____		_____	_____
10.	_____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum		mode	maximum
Volume % in entity	_____		_____	_____
<u>Gas in Gas Accumulations:</u>				
Volume % in entity	_____		_____	_____
11.	_____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum		mode	maximum
Volume % in entity	_____		_____	_____
<u>Gas in Gas Accumulations:</u>				
Volume % in entity	_____		_____	_____
12.	_____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum		mode	maximum
Volume % in entity	_____		_____	_____
<u>Gas in Gas Accumulations:</u>				
Volume % in entity	_____		_____	_____

ALLOCATIONS OF POTENTIAL ADDITIONS TO RESERVES TO LAND ENTITIES
Surface Allocations (uncertainty of a fixed value)

1. <u>Federal Lands</u>	represents	<u>57.39</u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	<u> </u>	<u>35.88</u>	<u> </u>
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	<u> </u>	<u> </u>	<u> </u>
2. <u>Private Lands</u>	represents	<u>27.43</u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	<u> </u>	<u>53.81</u>	<u> </u>
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	<u> </u>	<u> </u>	<u> </u>
3. <u>Tribal Lands</u>	represents	<u>4.88</u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	<u> </u>	<u>0</u>	<u> </u>
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	<u> </u>	<u> </u>	<u> </u>
4. <u>Other Lands</u>	represents	<u>1.68</u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	<u> </u>	<u>1.68</u>	<u> </u>
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	<u> </u>	<u> </u>	<u> </u>
5. <u>WY State Lands</u>	represents	<u>8.63</u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	<u> </u>	<u>8.63</u>	<u> </u>
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	<u> </u>	<u> </u>	<u> </u>
6. <u> </u>	represents	<u> </u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	<u> </u>	<u> </u>	<u> </u>
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	<u> </u>	<u> </u>	<u> </u>

7.	_____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum		mode	maximum
Volume % in entity	_____		_____	_____
<u>Gas in Gas Accumulations:</u>				
Volume % in entity	_____		_____	_____
8.	_____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum		mode	maximum
Volume % in entity	_____		_____	_____
<u>Gas in Gas Accumulations:</u>				
Volume % in entity	_____		_____	_____
9.	_____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum		mode	maximum
Volume % in entity	_____		_____	_____
<u>Gas in Gas Accumulations:</u>				
Volume % in entity	_____		_____	_____
10.	_____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum		mode	maximum
Volume % in entity	_____		_____	_____
<u>Gas in Gas Accumulations:</u>				
Volume % in entity	_____		_____	_____
11.	_____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum		mode	maximum
Volume % in entity	_____		_____	_____
<u>Gas in Gas Accumulations:</u>				
Volume % in entity	_____		_____	_____
12.	_____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum		mode	maximum
Volume % in entity	_____		_____	_____
<u>Gas in Gas Accumulations:</u>				
Volume % in entity	_____		_____	_____

ALLOCATIONS OF POTENTIAL ADDITIONS TO RESERVES TO FEDERAL LAND SUBDIVISIONS

Surface Allocations (uncertainty of a fixed value)

1. <u>Bureau of Land Management (BLM)</u>	represents	<u>54.57</u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	<u> </u>	<u>34.12</u>	<u> </u>
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	<u> </u>	<u> </u>	<u> </u>
2. <u>BLM Wilderness Areas (BLMW)</u>	represents	<u> </u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	<u> </u>	<u> </u>	<u> </u>
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	<u> </u>	<u> </u>	<u> </u>
3. <u>BLM Roadless Areas (BLMR)</u>	represents	<u> </u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	<u> </u>	<u> </u>	<u> </u>
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	<u> </u>	<u> </u>	<u> </u>
4. <u>National Park Service (NPS)</u>	represents	<u> </u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	<u> </u>	<u> </u>	<u> </u>
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	<u> </u>	<u> </u>	<u> </u>
5. <u>NPS Wilderness Areas (NPSW)</u>	represents	<u> </u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	<u> </u>	<u> </u>	<u> </u>
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	<u> </u>	<u> </u>	<u> </u>
6. <u>NPS Protected Withdrawals (NPSP)</u>	represents	<u> </u>	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	<u> </u>	<u> </u>	<u> </u>
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	<u> </u>	<u> </u>	<u> </u>

7. <u>US Forest Service (FS)</u>	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	_____	_____
8. <u>USFS Wilderness Areas (FSW)</u>	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	_____	_____
9. <u>USFS Roadless Areas (FSR)</u>	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	_____	_____
10. <u>USFS Protected Withdrawals (FSP)</u>	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	_____	_____
11. <u>US Fish and Wildlife Service (FWS)</u>	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	_____	_____
12. <u>USFWS Wilderness Areas (FWSW)</u>	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity	_____	_____	_____
<u>Gas in Gas Accumulations:</u>			
Volume % in entity	_____	_____	_____

13. <u>USFWS Protected Withdrawals (FWSP)</u>		represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum		mode	maximum
Volume % in entity	_____		_____	_____
<u>Gas in Gas Accumulations:</u>				
Volume % in entity	_____		_____	_____
14. <u>Wilderness Study Areas (WS)</u>		represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum		mode	maximum
Volume % in entity	_____		_____	_____
<u>Gas in Gas Accumulations:</u>				
Volume % in entity	_____		_____	_____
15. <u>Department of Energy (DOE)</u>		represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum		mode	maximum
Volume % in entity	_____		_____	_____
<u>Gas in Gas Accumulations:</u>				
Volume % in entity	_____		_____	_____
16. <u>Department of Defense (DOD)</u>		represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum		mode	maximum
Volume % in entity	_____		_____	_____
<u>Gas in Gas Accumulations:</u>				
Volume % in entity	_____		_____	_____
17. <u>Bureau of Reclamation (BOR)</u>		represents	2.82	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum		mode	maximum
Volume % in entity	_____		1.76	_____
<u>Gas in Gas Accumulations:</u>				
Volume % in entity	_____		_____	_____
18. <u>Tennessee Valley Authority (TVA)</u>		represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum		mode	maximum
Volume % in entity	_____		_____	_____
<u>Gas in Gas Accumulations:</u>				
Volume % in entity	_____		_____	_____

19. Other Federal	represents	area % of the AU

<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity			

Gas in Gas Accumulations:
Volume % in entity

20. _____ represents _____ area % of the AU

<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
Volume % in entity			

Gas in Gas Accumulations:
Volume % in entity

ALLOCATIONS OF POTENTIAL ADDITIONS TO RESERVES TO ECOSYSTEMS

Surface Allocations (uncertainty of a fixed value)

1.	Central Basin and Hills (CNBH)	represents	100	area % of the AU
	<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
	Volume % in entity		100	
	<u>Gas in Gas Accumulations:</u>			
	Volume % in entity			
2.		represents		area % of the AU
	<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
	Volume % in entity			
	<u>Gas in Gas Accumulations:</u>			
	Volume % in entity			
3.		represents		area % of the AU
	<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
	Volume % in entity			
	<u>Gas in Gas Accumulations:</u>			
	Volume % in entity			
4.		represents		area % of the AU
	<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
	Volume % in entity			
	<u>Gas in Gas Accumulations:</u>			
	Volume % in entity			
5.		represents		area % of the AU
	<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
	Volume % in entity			
	<u>Gas in Gas Accumulations:</u>			
	Volume % in entity			
6.		represents		area % of the AU
	<u>Oil in Oil Accumulations:</u>	minimum	mode	maximum
	Volume % in entity			
	<u>Gas in Gas Accumulations:</u>			
	Volume % in entity			

7.	_____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum		mode	maximum
Volume % in entity	_____		_____	_____
<u>Gas in Gas Accumulations:</u>				
Volume % in entity	_____		_____	_____
8.	_____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum		mode	maximum
Volume % in entity	_____		_____	_____
<u>Gas in Gas Accumulations:</u>				
Volume % in entity	_____		_____	_____
9.	_____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum		mode	maximum
Volume % in entity	_____		_____	_____
<u>Gas in Gas Accumulations:</u>				
Volume % in entity	_____		_____	_____
10.	_____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum		mode	maximum
Volume % in entity	_____		_____	_____
<u>Gas in Gas Accumulations:</u>				
Volume % in entity	_____		_____	_____
11.	_____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum		mode	maximum
Volume % in entity	_____		_____	_____
<u>Gas in Gas Accumulations:</u>				
Volume % in entity	_____		_____	_____
12.	_____	represents	_____	area % of the AU
<u>Oil in Oil Accumulations:</u>	minimum		mode	maximum
Volume % in entity	_____		_____	_____
<u>Gas in Gas Accumulations:</u>				
Volume % in entity	_____		_____	_____